4. CREATING AN EFFECTIVE ONE-STOP INFORMATION INFRASTRUCTURE

INTRODUCTION

All case study sites agreed that offering automated services based on new and improved information technologies is essential for serving greater numbers of One-Stop customers with diminishing resources. But creating an effective One-Stop information infrastructure is also intimately linked to the overall One-Stop system transformation goals of (1) enhancing customer choice by delivering easily accessed high-quality information that will help employers and job-seekers make good decisions about the future and (2) creating seamless service delivery systems by coordinating the efforts of multiple agencies.

Thus, information technology is viewed by some states as the "linchpin" of the One-Stop initiative. For example, One-Stop policy makers in Indiana expressed the opinion that using information technology effectively was the most important factor in improving that state's One-Stop system—more important than co-locating staff or creating integrated physical One-Stop facilities. Similarly, respondents in Wisconsin described information technology as the infrastructure needed to support the labor market information that drives both workforce development planning and individual customer services.

One interesting feature of the One-Stop information systems developed in the case study sites is that the distinction between information systems as *vehicles to deliver customer products* and information systems as *program management tools* is beginning to disappear. Increasingly, customers are being invited to manage their own service delivery process by accessing automated information systems. As part of this process, customers are asked to enter information about their needs, interests, and service preferences, and their level of satisfaction with the services they receive. Providing this information enables a customer to obtain information and enhanced services tailored to his or her needs. In a number of sites, it also provides the basis for the initiation of a client-level case record and case management file that can be used to guide the subsequent provision of staffed services to that customer and document the various services he or she receives over time. When it is time to assess system accomplishments and identify needed improvements, information from the same

information systems can be compiled and analyzed to describe customers, summarize the services they are using, and identify how services could be adapted to better meet customer needs.

GOALS FOR DEVELOPING A SHARED TECHNOLOGY AND INFORMATION INFRASTRUCTURE

An effective One-Stop information infrastructure supports several different aspects of One-Stop operations. Effective use of information technology was widely perceived as essential to the following goals:

1. Improving communication among on-site and off-site partners.
2. Increasing the accessibility and flexibility of One-Stop information services.
3. Freeing up staff to provide more personalized services and improving the coordination of services among One-Stop service providers.
4. Supporting system accountability by making it possible to measure progress toward common One-Stop system goals.

A number of One-Stop sites are developing new information infrastructures to deliver information services to customers and facilitate communication and information exchange among One-Stop agency partners. In this chapter we describe how the information technologies utilized by the different case study sites furthered each of these goals.

GOAL 1. IMPROVING COMMUNICATION AMONG ONE-STOP PARTNERS

In their efforts to build information-technology bridges between and among different agencies, One-Stop implementation states and local sites have faced challenges at three different levels: (1) facilitating day-to-day communications among One-Stop staff sharing the same facility; (2) supporting regular communication among partners located at multiple service sites within local One-Stop networks; and (3) providing for two-way information exchange on a statewide basis between state agency headquarters, state and local policy boards, and local One-Stop centers. Exhibit 4-1 describes how states and local areas have addressed these challenges.

Facilitating Day-to-Day Communication Among Center Staff

The first challenge described by most sites was that of facilitating day-to-day communication among One-Stop staff sharing the same facility. Respondents indicated that One-Stop staff in different partner agencies needed to communicate frequently

Exhibit 4-1
Examples of Approaches to Facilitate
Communication Among One-Stop Partners

Connecticut	All One-Stop center staff can exchange e-mail within centers, across centers, and with the state office using a wide area network. By the end of 1996, all staff were scheduled to have electronic mail and data transfer capabilities through the Internet.
Maryland	Communication among the local partners located throughout the Baltimore Career Center Network has been identified as an important system-level need. To address this need, local partners are using most of the local One-Stop planning grant received from the state to develop an automated scheduling network linking different service sites. Staff at any networked site will be able to dial-in to the scheduling bulletin board at any other site, pull up the schedule for any of the group workshops, counseling sessions, or training sessions offered at the site, and schedule a customer for an available time slot.
Massachusetts	The state has introduced a $2.7 million state bond measure that will help pay for the development of electronic linkages between regional employment boards, career centers, and the state career center office. At the FutureWorks Career Center in Springfield, Massachusetts, all staff can send and receive both internal and external electronic mail.
Minnesota	The co-location of partners within a unified Workforce Center in Anoka County has made it easier for partners to share information. Recently interpretations of state data privacy laws have clarified when the sharing of information is permissible. As a result, ES and UI staff may now access files from county-administered programs on an "as-needed" basis. There is a presumption that all Workforce Center partners will eventually share a single file server, a single leased communication line, and shared network resources through the state's communication network.

Exhibit 4-1 (Continued)

Ohio	Ohio has developed "The Partnership Exchange," a document that serves as a guide for local information-sharing agreements. The state agreement was signed by the chiefs of the departments of Human Services, Employment Services, Education, Aging, Development, and the Ohio Board of Regents. This guide describes which information generated or maintained by the One-Stop partner agencies is confidential and the circumstances under which confidential information may be disclosed or exchanged. Several local systems are in the process of developing local agreements. Plans at the Wood County Employment Resource Center include developing electronic linkages with off-site partners so that they can dial-in to access automated services and make client referrals.
Texas	Texas has developed a Texas Workforce Integration Network that will support the delivery of automated customer products and will also allow for a planned integrated client-management system. In Tarrant County (Dallas-Fort Worth), implementation grant funds were used to hire staff charged with developing a county-wide information network to support One-Stop operations. The resulting linkages will make it possible to provide access to common client databases and share information across partner agencies.
Wisconsin	Systems for facilitating day-to-day communication among staff within the Waukesha County Workforce Development Center include a common electronic mail and on-line scheduling system intended to help staff "act and feel like one organization." To accomplish this, agencies that still used mainframe-based MIS systems arranged to equip their staff with personal computers that could emulate "dumb terminals" when accessing their agency's mainframe computer and could also give them access to the PC-based communications network within the center.

about their shared interests—in the facility, in common customers, and in ideas for coordinating services—so that they could all become familiar with all One-Stop programs and build a common One-Stop "team" identity. Initial barriers to the flow of information among co-located One-Stop staff often included the absence of a shared telephone messaging or electronic mail system.

Several One-Stop centers found that installing an integrated telephone system and a computer-based electronic mail system improved the frequency and quality of communications among staff from different agencies. For example, in the Waukesha County Workforce Development Center, agency partners invested in personal computers for all on-site staff and installed a PC-based communications network that includes a common electronic mail system and an on-line scheduling system. Using the on-line scheduling system, staff can access each others' daily schedules and reserve specific times for planned activities in shared meeting rooms and classrooms. This new communications infrastructure, respondents said, has helped staff "act and feel like they belong to one organization."

Where systems for improving day-to-day communication were not put into place, staff from different agencies communicated less frequently and less effectively. At the Des Moines Workforce Development Center, for example, respondents indicated that the building of a sense of common enterprise had been hampered by the absence of improved communication tools. Although co-location in the shared facility had made staff from different agencies more aware of what partner agencies do, most staff in the Des Moines center were still primarily involved only with their own agency's programs at the time of the evaluation site visit.

Supporting Regular Communication among Partners within Local One-Stop Networks

The second communication and information-exchange challenge faced by a number of the case study sites was improving communication with staff in other local One-Stop service delivery sites—including other full-service One-Stop centers that were part of the same local network or additional satellite locations maintained by one or more partner agencies. For example, this challenge was an important one in the Tarrant County (Texas) One-Stop network, which includes seven different full-service centers administered by two different agencies. To address this challenge, the managers of the local network used local One-Stop implementation grant funds to staff the development of a county-wide information network. During the first year of One-

Stop implementation, project staff identified available computers, configured computers, and installed networking equipment to link the seven One-Stop centers to each other and to the local board responsible for overseeing the system. These linkages will make it possible to share information across partner agencies and provide partners access to a shared client database.

Other sites undertook less ambitious approaches to facilitate communication across local One-Stop partners not housed in the same facility. The Baltimore Career Center Network created a dial-in scheduling bulletin board that local One-Stop agencies throughout the city can use to schedule customers for available time slots in group workshops, counseling sessions, or training sessions offered by any other agency. The Wood County (Ohio) Employment Resource Center plans to develop electronic linkages between off-site partners and the One-Stop center so off-site partners can dial in to make client referrals and access automated services on behalf of their clients.

Supporting Communication Among State and Local Partners

Several states anticipate that a statewide information infrastructure will eventually connect all One-Stop career centers with each other, with regional policy boards, and with the state. These information networks will not only support automated services to One-Stop customers throughout the state, they will also facilitate staff-to-staff communications and information exchange. Texas has made the most progress in creating the information infrastructure to support this vision by developing a Texas Workforce Integration Network that will eventually support an integrated client-management system. At the time of the site visit, Massachusetts had introduced a $2.7 million state bond measure to help pay for the development of electronic linkages between regional employment boards, career centers, and the state career center office. Minnesota anticipates that all partners within One-Stop centers will eventually share a single file server, a single leased communication line, and shared network resources through the state's communication network.

GOAL 2. PROVIDING USER-FRIENDLY ACCESS TO INFORMATION FOR CUSTOMERS

A number of states had already made substantial progress in developing automated labor market information and career information products for direct customer access prior to receiving the One-Stop implementation grant. The One-Stop initiative was the occasion for reviewing these products, planning product enhancements, filling gaps, and developing a number of different technology platforms

from which these products could be made available to customers. Using electronic linkages, most states have made self-access products available not only at staffed One-Stop career centers, but also at a wide variety of community locations (e.g., libraries, department of motor vehicles offices, other social service agencies) as well as from individual homes and offices equipped with a computer and modem.

In seeking to create user-friendly automated services, a number of states have developed integrated packages oriented to the needs of specific users. For example, Connecticut has developed a job-seekers' component, a students' component, and an employers' component. Sophisticated software applications have also made it possible for customers to receive information tailored to their particular career interests, characteristics, or other specifications (e.g., jobs available in a particular geographic area or occupations in which expected wages exceed a certain level).

Key components of One-Stop information services in most states included statewide systems for (1) listing and reviewing job openings and matching job seekers to available jobs; (2) accessing America's Job Bank for nationwide job listings and America's Talent Bank for job-seeker resumes; and (3) providing career information, labor market information, and information about employment and training resources. Additional products under development in some states included self-assessment tools and on-line community-service directories. For example, Maryland is planning to expand its "career exploration" cluster by adding an automated self-assessment component and a computerized skill inventory. In Chapter 9, *Providing One-Stop Services to Individuals*, we describe the content of these information services in more detail.

As described in Exhibit 4-2, a number of sites have used new information technologies—including computer networks with client-server software, electronic bulletin boards, and access to the Internet—to multiply the number of different modes through which customers can access information services and to increase the interactive features of the products. Among the different delivery modes pursued in the case study states and local sites were the following:

- Self-service access to automated products for individual customers via computer workstations and multi-media laboratories within One-Stop centers. Most sites provide a resource librarian, resource specialist, or written user's guide to help orient customers to the automated information services.

Exhibit 4-2
Examples of Making Automated Services
Available through Multiple Modes

Connecticut	Automated labor market and occupational information services are available (1) on the state's public access network via workstations at career center offices; (2) through an Internet Web site for *Connecticut Works* which has links to the Connecticut Job Bank; and (3) through kiosks installed in state libraries and Department of Motor Vehicles offices. Automated voice response services are available for UI continuing claims and are being introduced for initial UI applications. A system for automated self-registration for ES services is under development.
Indiana	As part of the One-Stop initiative, Indiana is designing an integrated technology infrastructure to support customer access to information services and sharing of client information across programs. The Internet will be the major outside access point for the system, with local office use supported by a combination of wide-area networks and local-area networks. Indiana is also installing kiosks and PC-based systems providing access to the state's automated job listings within One-Stop centers in information resource areas, as well as in post-secondary schools, libraries, and other community sites. Additional points of access to automated information services will include remote access via telephone bulletin boards and the Internet.
Iowa	Workforce development centers are envisioned as having multiple electronic points of customer access for information and services including libraries, K-12 schools, community colleges, universities, and home computers via modem. The state's "Data Center" is an electronic bulletin board that offers labor market and job information.

Exhibit 4-2 (Continued)

Maryland	Maryland has taken responsibility at the state level to develop the "technological backbone" of the One-Stop system throughout the state by providing the hardware and software to deliver automated services to employers and job seekers. Initial investments were used to provide these services by linking all local workstations to a mainframe computer. During the second year of One-Stop implementation, the state planned to install local area networks to support the CareerNet software as well as developing Internet and other remote access features.
Massachusetts	The state has invested heavily in developing automated products that will support the delivery of core services to customers of the individual career centers. These products include a state electronic Job Bank, a Talent Bank, and an Education and Training Database. A state World Wide Web site provides electronic linkages to these products as well as to a variety of other federal, state, and locally-initiated Internet sites related to career centers, workforce development, education, financial aid, labor market information, and local services. Local career center operators are free to develop or procure their own self-contained automated products for career exploration, resume development, or other core services.
Ohio	Key automated information products include systems with information on careers, labor market information, and economic development and planning measures. New products will include America's Talent Bank, a resume preparation system, the incorporation of self-assessment tools into automated systems, and the development of an on-line community services directory. Under the One-Stop initiative, the state has targeted technology upgrades to take advantage of new information-sharing and information-management technologies. Goals include (1) making products available to customers through more user-friendly interfaces and (2) making automated systems available to staff and customers in an increasing number of sites and through a broader set of delivery platforms (including local area networks and Internet access).

- Access to automated products at satellite service sites hosted by a local One-Stop partner.
- Self-service information kiosks with touch-screen access to a number of different information services in "high-traffic" areas, such as shopping malls, discount stores, libraries, department of motor vehicles' offices, and secondary and post-secondary schools.
- Electronic bulletin boards with toll-free phone numbers that employer or individual customers can dial up to access automated information services and products.
- Internet World Wide Web sites created by individual One-Stop centers or states, with linkages to a variety of automated products also available on the Internet.
- Telephone request lines through which interested employers can request faxes of labor market information.
- On-line publication of periodic labor market information reports with up-to-date state and local information.
- Cable linkages to schools to make labor market information and career information resources available to students.

Generally, the customer response to these different options for receiving information services has been positive. Although some sites had worried about whether customers would like automated self-access services, individual customers responded positively in most sites because they feel "in charge" of the service process. Kiosks appeared to be the most problematic approach. Difficulties experienced with kiosks in some sites included vandalism, lack of timely updating of information, and absence of linkages to additional guided or enhanced services.

Increasingly, One-Stop centers ask customers to complete a self-registration process as the first stage in receiving a variety of self-access services. The information entered by the customer is used to create automated case records that are used to guide ongoing case management and follow-up services. Examples of self-registration procedures planned or initiated by the case study One-Stop implementation sites include the following:

- Automated self-registration for Employment Services (in Connecticut and Indiana).
- Registration as a user of the automated One-Stop information and labor exchange system (in Maryland).

- Completion by customers of their own UI benefits application information in person or through remote access (e.g., in Indiana, Texas).
- Direct posting of job openings by employers using electronic linkages (in Connecticut and Indiana).
- Self-registration in talent banks or posting of skills descriptions by job-seekers at One-Stop offices or from off-site through electronic linkages (e.g., in Connecticut, Indiana, Maryland).
- Enrollment in education and training classes (in Indiana).

In most of these self-registration systems, the information entered by the customers is entered into a case record that becomes available to other One-Stop partners on an as-needed basis.

However, most One-Stop sites have tried to limit the amount of information requested of self-service customers, lest the information requests deter customers from using the available services. The FutureWorks Career Center in Springfield, Massachusetts, is particularly sensitive to this issue. To minimize the customer burden associated with recording information about service utilization patterns, this center provides membership cards with identification bar codes to each customer. Every time customers access a given service, they are asked to "swipe" their membership card through a card reader to create an automated record of service usage.

GOAL 3. SUPPORTING THE DELIVERY OF COORDINATED AND CONSOLIDATED SERVICES TO ONE-STOP CUSTOMERS

A number of case study sites are developing integrated information systems to support the coordination or consolidation of services, including intake, eligibility determination, and enrollment. Customers can benefit by being able to access all One-Stop services after completing a single intake and enrollment process. Program operators can benefit by reducing the staff time devoted to front-end processes, while still sharing access to the information obtained from these integrated processes. In addition, a number of sites are developing integrated case management systems that will facilitate the ongoing delivery of seamless services to individuals who receive services funded by more than one program.

Developing Information Systems to Support Integrated Intake and Eligibility Determination

The development of a common intake system is viewed as a key objective in

many One-Stop states and local sites. As described in Exhibit 4-3, five of the nine case study states—Indiana, Iowa, Minnesota, Ohio, and Texas—are developing a statewide integrated client-level information system that all One-Stop partners can use to facilitate a common intake process.

Indiana had made the most progress in actually implementing a system at the time of the evaluation site visits. All 26 service locations in Indiana that are or will become One-Stop centers had begun using a "self-service" automated single intake process. The information provided by customers during the automated intake process is placed in customer case files, which staff from any program can access. These automated case files have replaced "traveling paper files" as the means for sharing eligibility and client information across partners. In both local sites visited, the common intake process was being used by ES, UI, and JTPA partners. In one site it was being considered for use by the welfare agency.

In contrast, Iowa, Minnesota, Ohio, and Texas were still planning and designing their integrated information systems during the first year of One-Stop implementation. Both Iowa and Minnesota are members of a multi-state consortium that has received a grant from America's Labor Market Information System (ALMIS) to develop a common access and intake information protocol for One-Stop systems. Ohio and Texas are each pursuing the development of an integrated client information system independently.

Because these systems were not yet operational during the first year of One-Stop implementation, local sites often developed temporary or ad hoc systems to support coordinated intake procedures. For example, local partners at the Anoka County (Minnesota) Workforce Center had developed a common three-page application form on which they were basing preliminary eligibility determination. In Tarrant County (Texas), One-Stop partners decided to purchase their own "off-the-shelf" intake and pre-assessment automated modules and to link their own information systems using wide area networks, while waiting for the state to develop a statewide information network and integrated intake system.

One barrier to the implementation of integrated intake and eligibility determination systems was a concern about client confidentiality rules. However, a number of different case study sites found that after One-Stop partners were co-located,

Exhibit 4-3
Examples of How Information Technology is Used to Support Coordinated Service Delivery

Indiana	The state is undertaking a long-term planning process to develop a single integrated intake/access module. At the present time, a "self-service" automated single intake process has been developed by the state and is being used by all 26 service locations that are or will become One-Stop centers. At the local case study sites, the information provided by customers during the single intake process is automatically placed in customer case files and enables customers to receive services from any staff person with access to the case files. It has replaced the "traveling paper file" for sharing eligibility and client information across partners. Automated case management systems have been initiated at the local level, primarily through the purchase and adaptation of proprietary systems.
Iowa	Iowa is a member of a multi-state consortium that has received an ALMIS grant to develop a common access and intake system for One-Stop systems. ES, JTPA, and welfare-to-work programs are expected to be the first programs to use the new system. Vocational rehabilitation is expected to join at a later date. Following the recommendations of a consultant, the state designed three phases in developing an integrated MIS: (1) establishing data access linkages among existing programs; (2) developing a common intake system; and (3) creating a fully-integrated case management, case tracking, and automated eligibility system.
Maryland	At the state level, an integrated intake and case management work group was planned for the second year of the implementation grant. Among the issues this group was scheduled to consider were the development of a broad tracking system that would allow client scheduling and case notes to be shared across partners. At the time of the site visit, case management and service information were not shared between partners at individual centers.

Exhibit 4-3 (Continued)

Minnesota	Minnesota is part of GEORGE, a multi-state consortium working to develop software to support integrated intake and the delivery of post-intake services in a One-Stop environment. At the time of the evaluation site visit, state staff were "somewhat optimistic" about linking JTPA, ES, UI, and VR information systems, but viewed the development of common intake with other agencies, such as the welfare agency, as a greater challenge. At the Anoka County Workforce Center, local partners had developed a common three-page application on which they now base preliminary eligibility determination.
Ohio	Ohio is developing a model for a common One-Stop client-level data base that will include a "common intake record" and a "record of service." Ohio encourages local service delivery areas to develop system-wide common intake procedures. Job-seekers will be required to input basic demographic data only once at a One-Stop center or partner service site. Partners will share information about subsequent service utilization and outcomes.
Texas	The state has attempted to take the lead in the development of information systems to support integrated services. Information components targeted for development include an integrated system for intake, eligibility determination, and shared service referrals. In addition, a component is being developed to support integrated case management. Because of delays in the development of the state system, some local areas have proceeded on their own to develop unified intake procedures. For example, the Lake Jackson Career Center has developed an integrated intake form to support integrated customer reception and referral on an interim basis.
Wisconsin	Under the One-Stop initiative, Wisconsin is planning to design an automated "menu of services" that can be tailored to the needs of each One-Stop center. Customers entering the center will be able to review, select, and automatically register for desired local services. The system will also perform an initial review of customer eligibility for some services.

they were usually able to overcome confidentiality barriers that had previously prevented agencies from exchanging client-level information. In Ohio, cross-program information sharing was facilitated by negotiating state-level agreements among the ES, UI, JTPA, and Veterans Employment Services programs. The state has strongly encouraged any additional local partners to negotiate local confidentiality agreements so that all One-Stop partners can access data maintained by other partner agencies on an as-needed basis. Respondents in several other sites indicated that confidentiality concerns should not be insurmountable barriers to the negotiation of inter-agency information-sharing agreements, because agencies can construct "fire walls" in shared information systems to protect data elements that they do not want to share.

Developing Integrated Information Systems to Support Service Planning and Case Management

Building on the tools that support integrated intake and eligibility determination, a number of One-Stop states and local sites have begun to develop shared automated case management systems. In sites where One-Stop partners have continued to provide separate and distinct services, these information systems have enabled One-Stop partners to coordinate service management by sharing information about customers receiving services from more than one program. In sites where One-Stop partners have developed integrated services, these information systems have supported the delivery of consolidated services by interagency service teams (e.g., cross-agency teams providing consolidated assessment, pre-employment training, or job search assistance/placement services to customers from several different categorical programs).

In some states, the planned state information system for One-Stop services will include the capacity to record individual assessment results, service plans, services received, and customer outcomes. For example, the prototype being developed by the multi-state "GEORGE" consortium—in which both Iowa and Minnesota are participating—will include tools that all One-Stop partner agencies can use to schedule client services, share case notes, support customer work plans, and document the delivery of transition services.

In a number of other states, however, the responsibility for developing information systems to support service coordination has been delegated to local One-Stop partnerships. For example, in Indiana, local service delivery areas have purchased existing automated case management systems. The product purchased by most local sites uses the information obtained through the state's single intake process to create

case records that are used to track subsequent customer services and outcomes. Wisconsin and Connecticut also encouraged local One-Stop systems to develop integrated case management systems, but left it up to each local area to develop shared information systems to support consolidated or coordinated case management.

Several case study sites found that the coordination of employer services across One-Stop partners was facilitated by developing a shared information system on local employer contacts. For example, Massachusetts developed an "account management system" to track employers' use of career centers and gave local career center operators the option of using the state system or developing one of their own. Local staff at the Waukesha County (Wisconsin) Workforce Development Center developed their own common database on employers to facilitate shared case management of employer contacts. With the help of this system, the partner agencies at this center developed an informal account representative system across all partners that identifies a single primary staff liaison for each employer.

GOAL 4. SUPPORTING SHARED ACCOUNTABILITY FOR ONE-STOP SYSTEM ACCOMPLISHMENTS

Because of the continued need to meet the specific reporting requirements imposed by different categorical programs—and because they do not want to lose their substantial investments in their current data processing systems—most states have not developed totally integrated accountability systems across all workforce development programs. Instead, most of the One-Stop states and local sites plan to use a "just-in-time" data extraction approach in which they build on existing program-based management information systems by "tying them together and putting a unified face on them."

As described in Exhibit 4-4, several states are planning integrated One-Stop client-level information systems that will be able to provide information about One-Stop system-level accomplishments. As previously mentioned, Iowa, Minnesota, Ohio, and Texas are all developing integrated information systems that are designed to guide coordinated service delivery and support systemwide accountability. In each case, the approach pursued has been to design an "open architecture" format that can extract information from and provide information to a wide variety of linked program-based information systems.

Exhibit 4-4
Examples of How Technology Supports
Shared Accountability for System Outcomes

Connecticut	Integrating management information systems is an important long-term goal. However, the continuation of individual reporting requirements for categorical programs has prevented much progress toward the creation of an integrated client-level information system. Rather than replacing the existing information systems for JTPA, ES, and UI, partners have developed information-sharing agreements. ES/UI and JTPA agency staff can now access each other's databases from their own offices.
Iowa	The state is taking the lead in developing an integrated information system to support the reporting and accountability functions for a consolidated workforce development system. Following the recommendations of a consultant, the state designed three phases in developing an integrated MIS: (1) establishing data access linkages among existing programs; (2) developing a common intake system; and (3) creating a fully-integrated case management, case tracking, and automated eligibility system. The first two phases were occurring simultaneously during the first year of One-Stop implementation.
Massachusetts	The state is working with an outside consulting firm to develop a state-level information system that can extract, manipulate, and store data from the local information systems developed by each career center operator. The state has taken responsibility for creating an interface to communicate with each local data system as well as for creating a consolidated data management system at the state level that will take over the preparation of required program-level reports. Massachusetts has developed an account management system to track employer use of the career centers. Individual centers are given the option of using the state system or developing one of their own.

Exhibit 4-4 (Continued)

Ohio	Using Ohio's prototype for a "rolling common intake" system, job seekers will be required to input basic demographic data only once at a One-Stop center or partner agency. Partners will share information about subsequent service utilization and outcomes. Customer information will be integrated by creating an expert front-end that links the information systems maintained by ES, UI, and JTPA. Ultimately, development of the "record of service" system will reduce the need for duplicate data entry and facilitate information sharing across programs.
Texas	The state has attempted to take the lead in the development of information systems to support integrated services. In addition a component is being developed to support integrated accounting for customer outcomes across the One-Stop system. The state is phasing out its mainframe-based system in favor of modular computer systems. An open architectural system has been designed to accommodate linkages with a myriad of existing local information systems Local areas are also proceeding with their own information-sharing linkages while waiting for the state system to become operational.
Wisconsin	Through the IT Blueprint Project, Wisconsin will guide the development of information technology to ensure state–local connectivity and compatibility while encouraging local refinements and innovations. The goal is to support coordinated/consolidated case management and to facilitate the sharing of information across programs. Center partners in Waukesha County are not attempting to design a common MIS to replace individual programs' record keeping requirements. Instead, they are developing a tracking system that would capture a few measures each program collects in common and that could be used to generate broad statistics about participants and the services they use. Initial registration in this system would be accomplished by customers upon arrival at the center.

The approach taken by Massachusetts permits local One-Stop career center operators to maintain information systems in whatever format and structure they prefer. Rather than developing a single integrated information system for use by all local One-Stop service providers, this state is developing a system to extract, store, and manipulate data from the local information systems developed by each career center operator. The state will create an interface to communicate with each local data system and will build a consolidated data management system at the state level. Plans call for this state-level system to prepare the required program-level reports for each categorical funding stream.

In the absence of integrated statewide information systems, some individual One-Stop centers have developed their own integrated reporting systems to summarize center-wide accomplishments. For example, center partners in the Waukesha County (Wisconsin) Workforce Development Center have designed a new center-wide performance tracking system that captures a few measures collected by all partner programs. This system—built upon self-registration information provided by customers—will be used to generate broad statistics about center customers and the services they use.

The One-Stop network in Baltimore is using aggregate statistics generated by each partner agency—on the numbers of units of service provided and number of customers served—to assess performance against integrated "production goals" established for the centers. Local partners are measuring the following outcomes for center customers on a monthly and annual basis: (1) the number of job placements for all customers as well as the number of job placements for JTPA customers; (2) the daily traffic flow through the Center; (3) the number of enrollments in the automated Job Bank; and (4) the number of individuals attending a JTPA employment preparation seminar, participating in self-paced training in the local resource laboratory, or participating in GED training or a skills brush-up class. Production statistics are reviewed monthly as part of a Center "performance review," which compares agency performance against goals.

ACCOMPLISHMENTS IN DEVELOPING A SUPPORTIVE TECHNOLOGY AND INFORMATION INFRASTRUCTURE

The One-Stop case study sites made substantial progress in applying new information technologies to improve the delivery of customer services and increase the sharing of information among participating agencies. Factors impeding the further development of integrated information systems included concerns about client

confidentiality, the continued need to meet the separate reporting requirements of different categorical programs, and the substantial investment of time and money required to develop the information infrastructure and design shared information systems to accommodate the needs of all partners. Considering these barriers, the accomplishments made within the case study states and local sites were notable. Among the accomplishments made by the One-Stop states were the following:

- Developing the information infrastructure needed to support communication among staff within One-Stop centers, among One-Stop centers in the same local systems, and between One-Stop centers and state-level agencies.
- Making automated information services available to One-Stop customers through a variety of delivery modes including on-site services at One-Stop centers, information kiosks in areas with high pedestrian traffic, and remote access through dial-in bulletin boards and World Wide Web sites on the Internet.
- Increasing the range of services available through self-access modes, including, in some sites, registration for UI benefits, registration for job matching services, posting of jobs by employers, posting of resumes by job seekers, use of automated self-assessment tools, and registration for education or training services.
- Developing shared information systems to support coordinated intake, eligibility determination, case management and other services by staff from multiple workforce development agencies.
- Developing methods to exchange and pool client-level or aggregate-level performance to measure overall accomplishments of the One-Stop system.

With respect to the delivery of self-access services to One-Stop customers, the information technologies harnessed during the first year of One-Stop implementation made possible clear enhancements in the range of available services and the accessibility of services. Needed improvements noted in a number of sites included working out some of the inevitable technical "bugs" associated with the introduction of a new system. There was agreement across most sites, however, that automated services—supplemented by the availability of staffed services when needed—were providing high-quality services to a broad range of One-Stop employer and job-seeker customers.

In some sites, the first-year efforts represented the initial stages of a long-term plan to develop shared information systems. In other sites, the information sharing

procedures developed during the first year were not intended to be permanent, but rather were interim solutions put in place until the future of integrated workforce development program legislation became clearer. Thus, many questions about system-wide accountability and how to use information technology to further the consolidation of One-Stop services across categorical programs remained unanswered at the end of the first year of One-Stop implementation.

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